

# **EXHIBIT 71**

Test Results of Champion Petfoods USA, Inc. and Champion  
Petfoods LP for Heavy Metals and Plasticizers

Prepared for:  
Rebecca Peterson

By:  
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April 1, 2019



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April 1, 2019

Rebecca Peterson  
LOCKRIDGE GRINDAL NAUEN P.L.L.P.  
100 Washington Avenue S  
Suite 2200  
Minneapolis MN 55401

Re: Case No. 2:18-cv-01736-DOC-JPR, Jennifer Reitman, Jennifer Song, Rachel Colangelo, Samantha Jerding, Richard Clapp, Zachary Chernik, Emma Berry, Pam Blackburn, Holly Rydman, Kirsten Pedersen, Ramy Shaker, and Scott Weaver, individually and on behalf of a class of similarly situated individuals, v. Champion Petfoods USA, Inc., and Champion Petfoods LP.

Dear Rebecca Peterson,

In accordance with your request I have evaluated potential Arsenic, Cadmium, Mercury, Lead, BPA, Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate) content in the above-named claim. I have received all available records and materials relating to the above-named claim.

The following is my evaluation and its supporting documents.

Please let me know if you have any questions regarding any of its content.

Best regards,

Dr. Gary Pusillo

Case No. 2:18-cv-01736-DOC-JPR

ASSUMPTIONS AND LIMITING CONDITIONS  
AND  
CERTIFICATE OF EVALUATION

Assumptions and Limiting Conditions

No responsibility is assumed for matters that are of a legal nature.

Use of the evaluation is reserved to the named recipient and use of it or any portions excerpted from the complete report is prohibited without written consent of the evaluator.

To the best of knowledge and belief, the information contained in this report is accurate. No responsibility is assumed for the data furnished by others or for the results of actions by anyone based on the contents of this report.

Certificate of Evaluation

The undersigned hereby certify that:

- I. There is no undisclosed interest either present or contemplated in this evaluation or the proceeds to be derived there from.
- II. To the best of my knowledge and belief, the statements in this evaluation are correct and the opinions stated are based on a full and fair consideration of all the facts available.
- III. The statements in this evaluation are made subject to the assumptions and limiting conditions set forth.
- IV. There are 35 consecutively numbered pages in this report including the supporting data.
- V. The findings reported herein will not be revealed to anyone other than the named recipient without permission or until required to do so by due process of law.

The effective date of this evaluation is April 1, 2019.

Respectfully submitted,  
Dr. Gary Pusillo

*Dr. Gary Pusillo*

## I. TABLE OF CONTENTS

I.	TABLE OF CONTENTS .....	4
II.	SUMMARY OF OPINIONS .....	5
III.	FACTS AND DATA CONSIDERED IN FORMING OPINIONS.....	6
IV.	MATERIALS AND DATA SOURCES .....	12
V.	CURRICULUM VITAE.....	13
VI.	TRIAL AND/OR DEPOSITION TESTIMONY .....	19
VII.	COMPENSATION FOR PROFESSIONAL SERVICES .....	19
VIII.	SAMPLING .....	20
A.	Purchasing Samples.....	20
B.	Preparing Samples.....	22
IX.	TESTING PROCEEDURES .....	23
A.	Iowa State University Veterinary Diagnostic Laboratory .....	23
B.	Expertox Drugs, Alcohol, and Poisons Laboratory.....	23
X.	RESULTS .....	24
A.	Iowa State University Veterinary Diagnostic Laboratory Results: .....	24
B.	Expertox Drugs, Alcohol, and Poisons Laboratory Plasticizers Results: .....	25
C.	Testing results as alleged in complaint. ....	26
XI.	STATISTICAL ANALYSIS .....	27
A.	Arsenic .....	27
B.	Cadmium .....	28
C.	Mercury .....	29
D.	Lead.....	30

## II. SUMMARY OF OPINIONS

1. There is sufficient evidence to support that dogs; during the period covered in this claim and eating the Acan and Orijen products listed in Tables (1.1, 1.2); were subjected to the unwilling consumption of Lead, Arsenic, cadmium, Mercury, Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate).
2. The laboratory analysis of the dog foods in Tables (3, 5) confirm the presence of Lead.
3. The laboratory analysis of the dog foods in Tables (3, 5) confirm the presence of Arsenic.
4. The laboratory analysis of the dog foods in Tables (3, 5) confirm the presence of Cadmium.
5. The laboratory analysis of the dog foods in Tables (3, 5) confirm the presence of Mercury.
6. The laboratory analysis of the dog foods in Table (4) confirm the presence of Bis-2-ethylhexyl-phthalate.
7. The laboratory analysis of the dog foods in Tables (1.1, 1.2, 4) confirm the presence of Dioctyl (phthalate).
8. Depending on the food they were consuming from Champion Petfoods, the dogs were unwillingly subjected to different levels of Lead, Arsenic, Cadmium, Mercury, Bis-2-ethylhexyl-phthalate, Dioctyl (phthalate), and BPA (based on the allegation in the complaint).
9. The number of different types of fish used contribute to the variation in heavy metal levels in those products that contain fish. See Table (10) Fish ingredients.
10. The number of “regional family farms” contributes to the variation in heavy metal content.
11. The content of heavy metals in the “meat” that Champion Petfoods purchases varies with species, diet, environment and the proportion of non-meat ingredients included in Champion Petfoods’ representation of meat.
12. Plastic bins, plastic liners in carboards containers, intermediate bulk containers (IBC), craft paper bags lined with plastic, and various raw ingredient containers are more likely than not a source of Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate) and BPA.
13. Packaging materials used by Champion Petfoods for the products listed in Tables (1.1, 1.2, 4, and 5) can be a source of Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate) and BPA.
14. The May 2017 Champion Petfoods, White Paper average results of Arsenic, Cadmium, Lead and Mercury when overlaid on the results in Tables 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 8, 9.1, 9.2, 9.3 show that the levels vary according to the type of food.

### III. FACTS AND DATA CONSIDERED IN FORMING OPINIONS

Test results of the samples shown in tables (3, 4, 5) indicated that Lead, Arsenic, Cadmium, Mercury, BPA, Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate) were present. This supports my opinion # 8.

The tables 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 8, 9.1, 9.2, 9.3 show that the levels of Lead, Arsenic, Cadmium, and Mercury vary according to the type of food that was tested. A pattern emerges that indicates certain foods are higher in certain heavy metals than others. This fact clarifies the need to monitor ingredients that arrive at the Champion Petfoods facilities for manufacturing. This supports my opinion # 1, 8, 9, 10, 11, and 14.

Champion Petfoods published a White Paper: Heavy Metals and Pet Foods in May 2017. This paper clearly shows that Acana and Orijen dog and cat foods contain arsenic, Cadmium, Lead, and Mercury. This paper reported combined results from unidentified Acana, and Orijen Dog Foods collected from May 2014 to May 2017. The tables 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 8, 9.1, 9.2, 9.3 demonstrate the reality of what heavy metals dogs eat when they are fed specific Champion Petfoods. This supports my opinion #1.

In the Clean Label report, Orijen and Acana food received a low score because of the heavy metal content that was found. See figures 1 & 2. This supports my opinions for #1, 2, 3, 4, and 5.



Figure 1 Clean Label Orijen Report card



Figure 2 Clean Label Report Card ACANA 1

75

76 Eurofins Laboratory analysis (Table 11) Eurofins Test Data lists fish and fish derived ingredients  
 77 used for manufacturing foods and their Arsenic, Cadmium, Mercury, and Lead levels. Table 11  
 78 also lists various complete Acana and Orijen foods with results that indicate Arsenic, Cadmium,  
 79 Mercury and Lead. This supports my opinions 1, 8, and 9.

80 Eurofins 001209-1707 showed that heavy metals started to be a concern in mainly fish derived  
 81 ingredients used at Champion Petfoods. Champion Petfoods employees submitting samples, often  
 82 were very vague in their submission descriptions and what exactly they wanted an analysis for.  
 83 For example, on page one; dated 9-15-15; Alfalfa is the sample description; however, this does not  
 84 define it as a hay, fresh cuttings, or meal. The mycotoxins tests are not listed as to what will be  
 85 tested for. It is important to note the estimated values are “unknown,” for most of the submitted  
 86 samples. This should not be true if their SOP’s are accurate and they are receiving COA’s from  
 87 vendors.

88 Catfish meal is listed in the 9-15-15 document on page two of Eurofins 001209-1707. Catfish meal  
 89 sample size for # 650 is 448.20 g and for # 651 is 457.27 g. These samples were designated to be  
 90 tested for heavy metals (arsenic, lead, cadmium, chromium, mercury, methylmercury). Champion  
 91 Petfoods requested a test for Biogenic amines even though they claim in their marketing materials  
 92 that they use the freshest ingredients.

93 The document CPF 1716733, COF 1716734, and CPF 1716735 all contain information about the  
 94 decision to change the source of catfish from those being farmed to those caught in a lake  
 95 monitored for heavy metals. This supports my opinion #9. Fish farming is known to produce  
 96 conditions where bioaccumulation of heavy metals takes place. Eurofins Laboratory analysis  
 97 (Table 11) Eurofins Test Data lists catfish meal and whole catfish levels of arsenic, cadmium,  
 98 chromium, mercury, methylmercury and lead. This supports my opinion #9, and 1.

99 In the document Eurofins001212, it lists fish being tested for heavy metals. There is a sample  
 100 called Catfish frames that indicates the whole catfish is not being used. This contradicts much of  
 101 the marketing materials put out by Champion Petfoods. I personally attended recent lectures by  
 102 Champion Petfoods employees at the 2019 Global Pet show in Orlando, Florida from March 20<sup>th</sup>  
 103 to the 22<sup>nd</sup>. The Champion Petfoods employees emphasized the use of the whole fish and not the  
 104 frames. I have notes, two videos of the Champion Petfoods’ lectures, and photographs, of the  
 105 Champion Petfoods booth. Promotional marketing materials were also collected from the  
 106 Champion Petfoods booth. Printed marketing materials were also collected directly from  
 107 Champion Petfoods employees that told me they only use the freshest whole fish and never racks.

108 My opinions are directly influenced by the fact Champion Petfoods uses catfish racks because of  
 109 the greater potential to have heavy metals that have bioaccumulated in the bones, certain organs,  
 110 the tail, and the head.

111 The total number of fish species and forms Champion Petfoods purchases them as, required a close  
 112 examination of heavy metal content that contributes to the overall heavy metal content in the  
 113 finished products. Table 10 shows the fish species used. This supports my opinion #9, 1, and 8.



The tables 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 8, 9.1, 9.2, 9.3 show that the levels of Lead, Arsenic, Cadmium, Mercury vary according to the type of food that was tested. A pattern emerges that indicates certain foods are higher in certain heavy metals than others. This fact clarifies the need to monitor ingredients that arrive at the Champion Petfoods facilities for manufacturing. This supports my opinion # 1, 8, and 9.

Nutritional suitability and overall composition are important considerations when considering the use of a specific ingredient to formulate a dog food. The nutritionist or plant manager should have the capabilities to predict the final product's level of heavy metals before the manufacturing process using computer formulation programs that contain up-to-date ingredient compositions.

The final analysis of the heavy metals in a certain product should be compared with other products manufactured at the same facility in order to see if there is a pattern in the heavy metal content due to a common ingredient. Variation of heavy metal content between products is critical to the understanding of how heavy metal combinations can contribute to toxicity or nutritional unsuitability.

The following contribute to variation in heavy metal content of ingredients:

1. Source of parent material
2. Supplier of parent material
3. Processing method
4. Harvesting procedure
5. Storage containers' physical makeup
6. Storage conditions
7. Country of origin
8. Additives to ingredient
9. Age of the ingredients
10. Physical form: solid small particles, solid large particles, within a liquid, liquid, within plant structure, within animal tissue, within animal bone.
11. Seasonality of available ingredients.

Unique to the Champion Petfoods method of taking and supplying samples for testing to Eurofins, is their sample submission errors. For example, see Eurofins001215. There is a problem with sample identification of what fish is used for sample #559. The lab does not know if Champion Petfoods ever mentioned Monk or Hake on their ingredient labels. These fish have inherent problems associated with them.

Eurofins001216, Champion Petfoods submitted a form only asking for a "fresh protein" analysis; date submitted 3-5-2015. Sample # 559 is included on the submission form as "unidentified sample." The sample autoclave tag indicates that sample # 559 initial weight was 16.5 Lbs.

150 Eurofins001218 indicates that the testing for heavy metals might be associated with the samples  
151 submitted on 3-5-2015. If so, they were testing for heavy metals, but their formulations should  
152 input potential heavy metal levels going into final products. This page is identified as a “special  
153 project-Champion” 2-3-month project.

154 March 24, 2015 pg. 15 (Eurofins001223) fish without paperwork was received. Date submitted  
155 was 3-23-15 and it was listed as Hake/whiting. The paper asked for “rush vitamin D analysis on  
156 all fish.”

157 BPA, Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate) levels are known to change overtime  
158 depending on storage conditions, ingredients stored, and handling practices. Table 4 lists Bis-2-  
159 ethylhexyl-phthalate, and Dioctyl (phthalate) levels for the foods that were tested. The levels of  
160 BPA are in Table 5. Plastic bins, plastic liners in carboards containers, intermediate bulk containers  
161 (IBC), craft paper bags lined with plastic, and various raw ingredient containers are more likely  
162 than not a source of Bis-2-ethylhexyl-phthalate, and Dioctyl (phthalate) and BPA. This supports  
163 my opinion # 8, 12, and 13. In the deposition of Jonathan Ellis, he provides information regarding  
164 various types of plastic containers and liners that are used at Champion Petfoods. This supports  
165 my opinions #8, 12, and 13. On page 45 ln 19-25:

166 A. Jonathan Ellis: Deposed 10/22/2018

167 Q So you just said that plastic wasn’t a common ingredient in product movement, but it  
168 sounded to me that --

169 A Yeah.

170 Q -- almost all of the ingredients are stored in plastic?

171 A Correct. (p.45 ln 19-25)

172 Mr. Ellis gives further testimony regarding plastic use at Champion. He also indicated that  
173 plastic IBC’s make it into the heating cabinet page 115 ln 2-6.

174 Rick Rapos’s deposition that there were craft paper bags that were-craft paper that were  
175 lined with plastic page 16 Ln 19-26. On page 84 ln 8-14 it was indicated that an insulated  
176 plastic tote is used for fresh meats to go in.

177 Rick Raposo deposition also addresses the issue of BPA.

178 Q. Why did you request the specs on pork tallow IBC totes from Master Butcher?

179 A. As we talked earlier about some of the packaging materials that we wanted to understand  
180 on -- and have documentation on BPA, this is one of those packages. An IBC tote is a tote  
181 that can hold tallow or liquid, and it has a plastic bladder with an aluminum cage. p. 203 ln  
182 2-10

183 In the Ellison deposition p 17; ln 11-21, there is an affirmative yes that a bin would be something  
184 made of plastic material. This supports my opinion #8, 12, and 13.

Page 21, 22, 23, 24, 25 Eurofins 001229,001230, 001231,0001232,0001233 there is a reference made about Acana Chicken and Greens 9-10-15 and that it is shelf stable without refrigeration or has been fully rendered. Is this considered “Fresh and Biologically Appropriate?” This certainly does not match the marketing materials about being fresh. How long is the kibble stored in the bags before testing? They do not seem to be sending in samples that have been stored for extended periods of time. This is important as plasticizer levels change over time.

Page 26 (released 9-29-15) Eurofins001234 states: “Do not test for cyanogenic glycosides. Only do heavy metal on Salmon oil.” Requesting to do only heavy metals on salmon oil and not cyanogenic glycosides. Champion Petfoods must have had problems with cyanogenic glycosides in some of their plant ingredients. Cyanide is formed following the hydrolysis of cyanogenic glycosides.

Page 28 Eurofins001236, illustrates how Champion Petfoods does not know what the expected levels are for the ingredients they say they purchase from suppliers with a strict SOP regarding COA. No heavy metals are tested even though some of the ingredients are known to have the capacity to uptake large amounts of heavy metals. This supports my opinions #1, 8, 11.

Page 29 Eurofins001237 is indicating only to test salmon oil for heavy metals. This supports my opinion #9. There is internal knowledge of the fact that fish products have more problems associated with heavy metals. Pork fat can be a problem, but they did not ask for heavy metal analysis.

There are noticeable changes in testing from 2015 to 2018. The fish products became the most prevalent ingredients tested for heavy metals. It appears evident they were finally able to narrow it down to what fish products had the most variation in heavy metals and they began to change their ingredient choices and sources. For example, pg. 167 Eurofins001375, the pork meal and chicken meal were not tested for heavy metals, but the herring meal was tested. The same situation of testing fish vs other ingredients can be seen on page 172, -174 with all samples being submitted at the same time 1-26-18. These data support my opinions #8, 9.

A herring oil sample 62.6 grams was not tested for heavy metals pg176. Eurofins001384. This supports my opinions # 1, 8, 9.

ACA freshwater fish is not identified as to species. It was submitted for testing (295.1g) for heavy metals. Eurofins001386; pg178.

12 samples were submitted on 1-29-18 Eurofins001387. There were 8 fish products that were tested for heavy metals, the other ingredients were not tested. This supports my opinions # 1, 8, 9.

2-17-18 Eurofins001393 to Eurofins001397, 22 samples were submitted. 20 samples were “mixer samples” for Na testing. This indicates that Champion Petfoods wanted to test their mixers to see if they were blending formulations properly. One sample, #265 was flounder and it was tested for heavy metals. 266 was Bison meat and organs which was not tested for heavy metals.

2-26-28, 6 samples were submitted to Eurofins (Eurofins001399). The 6 Fish Cat Blend was tested for heavy metals. Four of the six; deboned chicken, deboned duck, rabbit and turkey giblets; were

223 tested for fat, moisture, ash and protein. The remaining sample butternut squash was only tested  
 224 for fiber. This shows that Champion Petfoods is still concerned with heavy metals coming from  
 225 fish and not the other ingredients.

226 March 9, 2018, cod liver blend was submitted for testing for Fat, Free fatty acids, moisture, ash,  
 227 vitamin D and heavy metals. Again, this is another fish ingredient that was suspect of contributing  
 228 to heavy metals. If they did have a problem with naturally occurring heavy metals, they would not  
 229 have tested for them. Eurofins001402. This supports my opinions # 1, 8, 9.

230 Naturally occurring minerals seem to be a concern with dried chicken 4-4-2018 Eurofins001407  
 231 and low ash lamb meal Eurofins001411. During the same submission, herring meal is marked for  
 232 the same tests except for the additional heavy metal tests Eurofins001409 as is White fish meal  
 233 Eurofins001413. This data supports my opinions # 1, 8, and 9.

234 4-4-18 had Fish Dry Pal which was only tested for ash, protein, moisture and fat, at the same time  
 235 Pea starch was tested for everything as the Fish Dry pal except for ash. It appears that Champion  
 236 Petfoods nutritionists or QC managers are confident where the high levels of heavy metals were  
 237 coming from. 10-11-18 Fish Dry pal was submitted with the statement DP-Core/heavy metals but  
 238 it did not list the metals to be tested. It was tested for Protein, fat, moisture, P, ash, and Ca.  
 239 Eurofins001619.

240 On 4-5-18, catfish meal was submitted for proximate analysis, and elemental mineral tests  
 241 including heavy metals. At the same time spray dried duck, spray dried beef liver, and dried turkey  
 242 were tested for the same tests omitting heavy metals. This supports my opinions #1, 8, 9, 10 and  
 243 11.

244 For the most part beans, fruits and vegetables were tested for fiber, moisture, protein, starch and  
 245 fat. Starch and fat tests were not as frequent among some vegetable-based ingredients. 4-6-18, 8  
 246 samples were submitted for testing. The only ingredient tested for elemental metals, including  
 247 heavy metals, was spray dried sardines. Naturally occurring elemental metals without heavy metals  
 248 were tested in beef meal (Eurofins001431), LA Dried chicken Eurofins001433, and HPPC  
 249 Eurofins001435. These data support opinions #1, 8, 9, 10 and 11.

250 LA Dried Chicken was submitted 10-11-18 for heavy metal testing.

251 In 12-21-18, 3 Samples; goat meal (sample12210397), HPPC (sample 398) and pork meal (sample  
 252 12210399); were tested for heavy metals, phosphorus, and calcium. Eurofins001661,  
 253 Eurofins001663, Eurofins001665.

#### IV. MATERIALS AND DATA SOURCES

I have received the following materials. Additionally, included in this report are scientific statistics and data relating to heavy metals, plasticizers, nutrition, illness and general practices of pet food manufacturing.

031129995697.pdf Defendants' Answer And Affirmative Defenses To Plaintiffs' Second Amended Class Action Complaint  
 1bff71438df58428c0c76f386c8f50.pdf CPF1683276  
 2019-02-26 Summary chart of documents.pdf  
 62ef1eddfaf0fc5c7c9f822eb7cf0f.pdf CPF2093319  
 Champion [Reitman] 2019.01.07 [Chris Milam] Errata Sheet.pdf  
 COAs - Eurofins000001-520.pdf  
 CPF0000237.pdf - CPF2117773.pdf  
 CPF0047009 chinavitaminpack.pdf  
 CPF0057893.pdf - CPF1630348.pdf  
 CPF0102953.pdf - CPF2092196.pdf  
 d8d0c448f3fa791a637d0355482e32.pdf CPF1716733  
 Depo Transcripts for Plastic Storage\_1346552\_2.doc  
 Deposition of Gayan Hettiarachchi Errata Sheet.pdf  
 Deposition of Ms. Tarry Errata Sheet.pdf  
 Docket 23-1 - Ex. 1 - Motion for Leave to File 2nd Am. Complaint.pdf  
 Docket 39 - First Amended Complaint.pdf  
 Hettiarachchi, Gayan - Condensed.pdf  
 Invoices - Eurofins000521-1173.pdf  
 Ltr. to Rebecca Peterson (Eurofins Reitman).pdf  
 Milam, Christopher - Condensed.pdf  
 Proficiency - Eurofins001174-1186.pdf  
 Protocols \_ Eurofins001187-1208.pdf  
 REITMAN000059-000084.pdf  
 Royal Society - Cancer in Humans and Dogs (rates).pdf  
 SARFs - Eurofins001209-1707.pdf  
 Tarry, Ms. - Condensed.pdf  
 White Paper CPF0001225.pdf  
 WhitePaper\_-\_Heavy-Metals-in-Pet-Foods-White-Paper.pdf

In addition to the above-mentioned data, I have relied on my many years of experience and education which is inherently related and relevant to the reported toxins identified in the various documents, and other information sources. As new information becomes available, this evaluation will be supplemented or amended accordingly.

## V. CURRICULUM VITAE

Dr. Gary Michael Pusillo

298

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gpusillo@intiservice.com

### Present Position:

INTI Service Corporation, Marshalltown, IA

Owner and President

Since 1995, INTI Service has developed and formulated specialty animal feeds, supplements, and health care products for domestic and exotic animals. The company provides nutritional consulting advice to animal owners, and manufacturers involved in the animal industry. It also provides investigative forensic and expert witness services for claims and litigated cases involving animal deaths, production abnormalities, and injuries.

### Education:

B.S. in Animal Husbandry and with an additional 12 semester credits in Laboratory Animal Sciences enabling AALAS certification. Delaware Valley College of Science and Agriculture (1980)  
M.S. in Animal Production from Iowa State University (1984)  
Ph.D. in Animal Nutrition from Iowa State University (1986)

### Additional Education:

Continuing education courses, 16 credits annually since 1986  
Artificial Insemination Technician short course, 1977  
Feed Microscopy short course, 1989

### Board Certifications:

Diplomat ACAN (American College of Animal Nutrition), Since 1995.  
PAS (Professional Animal Scientist), Since 1986.  
AALAS (American Association of Laboratory Animal Science) Technologist, 1979.  
Certified Microscopist (The American Association of Feed Microscopists-Florida State University, Tallahassee, Florida) 1989.  
AAFS (American Academy of Forensic Sciences) Full Member – February 2015.

### Other Employment and Professional Interests:

Company	Role	Year
Botanical Intelligence	Leading Scientist & Formulator	2019
Bilby BioPure PTY Ltd	Executive Head of Technology	2019
Inteq, LLC	Head of Technology and Research	2019
Ortho Equine	Head of Nutrition, Research, and Product Development	2001 – Present
Pipeline Pet	Executive Animal Nutrition Expert and Head of Research and Development	2014 – Present
Reilly's HempVet	Consultant	2016 – Present
Buddy's Kitchen	Head Nutritionist Research and Development	2011 – Present
Pro SAAMYA, Inc.	Consultant and Technical Assistance	2012 – 2014
Big Gain Feeds	Equine Consultant and Technical Assistance	2008 - Present
Complete Natural Nutrition	Chief Technology Officer	2005 – 20017
Oligo Basics U.S.A., LLC	Consultant and Shareholder	2005 – 2010

Apperon, Inc.	Consultant	2001 – Present
United Suppliers, Inc.	Manager for AgiBlenders	1991 – 1995
Farmers Feed and Supply Co.	Director of Nutrition	1988 – 1991
Woody's Performance Horse Feeds	Executive Nutrition Expert	1988 – Present
Freehold Race Track Feed Co.	Manager/Consultant	1986 – 1988
Iowa State University	Research Assistant	1980 – 1986

- Employs advanced analytical and investigatory skills and expertise to collect information and evaluate technology to develop scientifically-based solutions to complex, animal nutrition problems.
- Provides guidance in establishing and maintaining sound environmental practices for animal management.
- Arrange and conduct custom animal research and product testing.
- Advises individuals and entities in developing and marketing animal feed and products for domestic and international markets. Developed over 2000 animal premix, base mix, pet supplement, pet food, livestock feed, horse feed, horse supplement, and specialty product formulations.
- Former consultant and animal feed formulator for Disney's Animal Kingdom and Ringling Brothers Circus.
- Consultant to major farms and animal nutrition and health companies in Brazil and Argentina, providing veterinary and nutrition services.
- Conducts ongoing research into the use of natural treatments and the prevention of diseases by native cultures.
- Assist with Master's and PhD research and mentoring at Iowa State University.
- Owned and operated conventional and organic farms for the production of crops and the care and raising of livestock, including goats, swine, horses, sheep, dairy and beef cattle, veal calves, replacement dairy heifers, chickens, ducks, geese, quail, and pheasants.
- Develops proprietary animal forensic techniques and conducts forensic investigations.
- Accepted as an expert witness by State and Federal courts to provide testimony on veterinarian and nutritional issues.
- 16 Kentucky Derby winners associated with provided nutritional expertise and products.

#### **Appointments and Committees:**

Food Science Corporation Science Advisory Board, 2006 – Present  
 Revival Animal Health Nutrition, Advisory Board, 2013 – Present  
 Thomas Laboratories, Professional Animal Health and Nutrition Advisory Board, 2014 – Present  
 McIntosh Proline, Chief Nutritional Officer and Head of Research and Development, 2013 – Present

#### **Patents and Patents Pending:**

Therapeutic and Nutritional Compositions 16/234,992 filed 12/28/18  
 Method of Fortifying seeds with an essential fatty acid, fortified seed and food product. US 7,416,752 B2. Chief scientist in charge of extending and verifying patent for increasing commercial production techniques.

#### **Honors and Awards:**



375  
 376 *American Academy of Forensic Sciences General Section Achievement Award, 2012*  
 377 *Iowa State University PACE Award for Academic Excellence, 1981*  
 378 *Bernstein Award for Excellence in Writing a Scientific Paper, 1980*  
 379 *American Society of Animal Science Scholarship Award, 1980*

380  
 381  
 382  
 383  
 384 **Professional Societies and Organizations:**

385 American Academy of Forensic Sciences Member (AAFS)  
 386 American Registry of Professional Animal Scientists (ARPAS)  
 387 American Society of Animal Science (ASAS)  
 388 American Dairy Science Association (ADSA)  
 389 American Association of Small Ruminant Practitioners (AASRP)  
 390 Equine Science Society (ESS)

391  
 392 **Articles and publications:**

393  
 394 Pusillo, G.M. and J.K. Pusillo. 2018. "Environmentally Influenced External and Internal Microbiome Populations:  
 395 "Over Processed" Horses and Long-Term Consequences." Proceedings of the 79<sup>th</sup> Minnesota Nutrition Conference,  
 396 Mankato, Minnesota.

397  
 398 Pusillo, G.M. and T. Purevjav. 2017. "Nutritional Management of Horse Saliva-Liquid Immune support."  
 399 Proceedings of the 78<sup>th</sup> Minnesota Nutrition Conference, Mankato, Minnesota.

400  
 401 Pusillo, G.M. and T. Purevjav. 2016. "*Using Glyphosate Testing to Sell Professional Services, Supplements, or a*  
 402 *Completely New Feed Program,*." Proceedings of the 77<sup>th</sup> Minnesota Nutrition Conference, Prior Lake,  
 403 Minnesota.

404  
 405 Pusillo, G.M. and T. Purevjav. 2015 "*Removing the "Fish Market Affect: Incorporating Fish EPA and DHA into the*  
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 The Living Orchestra, 2002.  
 Protein for Goats: When More of a “Good Thing” is a “Bad Thing”, 2002.  
 How Drinking Water Affects Hoof Quality, 2001.  
 Before the Bite – Preventing the Effects from West Nile Virus by Optimizing Immune System Function, 2000.  
 Right “Whey” for Cell Defense, 1999.  
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 What Image Does Your Ostrich Feed Project? 1998.  
 Copper Toxicosis in Sheep, 1997.  
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 Vitamin and Mineral Deficiencies (Horse Handbook), 1997.  
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 Vitamin E Function and Deficiencies Characteristics in Goats, 1995.  
 How to Build a Boer Goat: The Seven Stages of Development, 1995.  
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486 Vitamin E Function and Deficiency Characteristics in Swine, 1991.  
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495  
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502 Quality Oats and Their Benefits, 1988.  
503  
504 Lactobacillus Acidophilus and its Effect on Animal Health, 1988.  
505  
506 The Effects of Placing Cattle on Feed at Bi-Monthly Intervals, Housing and Stage of Feeding upon Feedlot  
507 Performance and Carcass Grades, 1986.  
508  
509 Dairy Goat Feeding, 1985.  
510  
511 Effects of Housing and Starting Cattle on Feed at Bi-Monthly Intervals, 1984.  
512  
513 The Influence of Housing and Intermittent Marketing upon Alternative Beef Cattle Marketing Systems, 1984.  
514  
515 Feedlot Performance and Carcass Composition of Steer Calves Fed Varying Ratios of Corn Silage and Corn Grain,  
516 1983.  
517  
518 Effects of Housing System on Dressing Percentage, 1982.  
519  
520 Effects of Varying Ratios of Corn Silage and Corn Grain upon Feedlot Performance of Calves, 1982.  
521  
522 Calendarizing Cattle Feeding in Iowa, 1981.  
523  
524 Effects of Season and Weight on Yearling Steer Performance, 1980.  
525  
526 **Speaking Engagements and Presentations:**  
527  
528 Minnesota Nutrition Conference, Mankato, Minnesota, September 2018.  
529 Selected paper entitled: "Internal Microbiome Populations: "Over Processed" Horses and Long-Term  
530 Consequences."  
531  
532 Minnesota Nutrition Conference, Mankato, Minnesota, September 2017.  
533 Selected paper entitled: "*Nutritional Management of Horse Saliva-Liquid Immune support.*"  
534  
535 Minnesota Nutrition Conference, Prior Lake, Minnesota, September 2016.  
536 Selected paper entitled: "*Using Glyphosate Testing to Sell Professional Services, Supplements, or a Completely New*  
537 *Feed Program.*"  
538  
539 Minnesota Nutrition Conference, Prior Lake, Minnesota, September 2015.  
540 Selected paper entitled: "*Removing the "Fish Market Affect: Incorporating Fish EPA and DHA into the Flax Plant."*"

Minnesota Nutrition Conference, Prior Lake, Minnesota, September 2014.

Selected paper entitled: *"The Future of Fat and Fatty Acids in Horse Diets; Beyond Energy."*

65<sup>th</sup> Annual Scientific Meeting: The Forensic Sciences. Washington, DC 2-18-23, 2013. Examinations of the Standards of Normality (SON) and Production Standards (PS) to Best Identify Critical and Definitive Information Pertaining to Alleged Nutritional Associated Dysfunctions (NAD) in Animals

64<sup>th</sup> Annual Scientific Meeting Global Research: The Forensic Science Edge. Atlanta, Georgia 2-20-25, 2012. Animal Nutrition Investigative Techniques Essential to Obtaining Investigative Forensic Information from Multiple sites

Iowa State University lecturer as needed: Forensic investigation techniques, Applied production Nutrition

Alltech's Sixth Annual Symposium speaker (1990): Animal Waste Problems: Practical Means of Odor Control in Livestock Units and Food Processing Facilities.

1<sup>st</sup> Annual Nutraceutical Alliance Symposium speaker (1999); Toronto Canada: Dietary Whey Protein: an immune revolution for animals? The Development of a Veterinary Nutraceutical.

3<sup>rd</sup> Annual Nutraceutical Alliance Symposium speaker (2002); Ontario Veterinary College University of Guelph: Colostrum composition and functions in neonates, across species, and for specific applications for animal health.

Second European Equine Health & Nutrition Congress, 2004, Equine Research Centre, Waiboerhoeve, Lelystad, The Netherlands (2004): Oxidative Stress, Glutathione and intracellular nutrition.

Veterinary schools in Brazil and Argentina guest lecturer, 1996-2004: Production nutrition and practical Veterinary intervention techniques.

Frequent speaker, lecturer and educator throughout the United States and Canada on animal husbandry nutrition, veterinary science, environmental influences and farming practices (1986-present).

Interviewed by ABC's 20-20, USA Today, Blood Horse, and Thoroughbred Times

TV appearances discussing nutrition on WDIV-TV, KARE-TV, WCCO-TV and KMSP/FOX 9.

Radio interviews discussing nutrition and animal health on WHO-AM, WTGB-CBS, WTMR-AM, WFAX-AM, KYW-AM, WARW-FM and WTOP-AM/FM. Interviewed numerous times by Dr. Alan Pressman, whose radio program is carried on 11,000 stations in the United States.

#### **Civic Interests:**

Ordained Permanent Deacon in the Roman Catholic Church, 2003 – Present.

Jail ministry Chaplain 2003 – Present.

Immigrant ministry 2003 – Present.

F3 Garden project 2000 – Present.

589 VI. TRIAL AND/OR DEPOSITION TESTIMONY

590  
591 Dr. Gary Pusillo  
592 2015-2019

- 593 - Flanigan v. Western Milling  
594     o 2018  
595     o California  
596     o Species: Horses  
597     o Expert Witness for Plaintiff  
598     o Attorney: Warren R. Paboojian  
599     o Deposition testimony  
600  
601 - Smith v. Southern States, et al.  
602     o 2015  
603     o Kentucky  
604     o Species: Bovine  
605     o Expert Witness for Plaintiff  
606     o Attorney: John Henderson  
607     o Deposition testimony  
608  
609 - Tracey K. Kuehl, et. al v. Pamela Sellner, et al.  
610     o 2015  
611     o Iowa  
612     o Species: Zoo Collection  
613     o Expert Witness for Defendant  
614     o Attorney: Larry J. Thorson  
615     o Deposition and Trial testimony  
616

617 VII. COMPENSATION FOR PROFESSIONAL SERVICES

618  
619 I am being compensated at \$300.00 per hour for all work besides deposition and trial testimony  
620 which is invoiced at \$400.00 per hour.  
621

## VIII. SAMPLING

### A. Purchasing Samples

Two sets of the contaminated Champion Petfoods dog foods were purchased. To assure that there was a variety represented by the purchased samples, samples were purchased from 3 different retailers. Sample numbers 1, 8, 14, 15, 17 and 19 were purchased locally from Treats on a Leash in Ames, Iowa. Sample numbers 3, 5, 10, 16, 22, and 29 were purchased from Amazon.com. Sample numbers 2, 4, 6, 7, 9, 11, 12, 13, 18, 20, 21, 23, 24, 25, 26, 27 and 28 were purchased from K9Cuisine.com. The samples purchased from Treats on a Leash were 4.4 - 4.5lbs bags. Samples purchased from Amazon.com and K9Cuisine.com were 6-12oz sample size bags.

Table 1.1: Purchased Samples, Set 1

#	Dog Food Name	Date Purchased	Sample Purchased	Sample Size	Sample Price
1	Acana Heritage Free-Run Poultry Formula Dry Dog Food	1/27/2019	Treats on a Leash	4.5 lbs.	\$ 17.99
2	Acana Heritage Freshwater Fish Formula Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 3.99
3	Acana Heritage Meats Formula Dry Dog Food	2/7/2019	Amazon	12 oz	\$ 7.69
4	Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 4.99
5	Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	2/7/2019	Amazon	12 oz	\$ 8.10
6	Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 4.99
7	Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 4.99
8	Acana Singles Duck and Pear Formula Dry Dog Food	1/27/2019	Treats on a Leash	4.5 lbs.	\$ 21.99
9	Acana Singles Lamb and Apple Formula Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 4.99
10	Acana Singles Mackerel and Greens Formula Dry Dog Food	2/7/2019	Amazon	12 oz	\$ 6.99
11	Acana Singles Pork and Squash Formula Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 4.99
12	Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	2/7/2019	K9 Cuisine	6 oz	\$ 13.99
13	Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	2/7/2019	K9 Cuisine	12 oz	\$ 5.99
14	Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	1/27/2019	Treats on a Leash	4.5 lbs.	\$ 26.99
15	Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	1/27/2019	Treats on a Leash	4.5 lbs.	\$ 26.99
16	Orijen Regional Red Freeze-Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	2/7/2019	Amazon	6 oz	\$ 16.99
17	Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	1/27/2019	Treats on a Leash	4.5 lbs.	\$ 25.99
18	Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	2/7/2019	K9 Cuisine	6 oz	\$ 17.99
19	Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	1/27/2019	Treats on a Leash	4.4 lbs.	\$ 28.99

Table 1.2: Samples Purchased, Set 2

	Dog Food Name	Date Purchased	Sample Purchased	Sample Size	Sample Price
20	Acana Heritage Free-Run Poultry Formula Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 3.99
21	Acana Heritage Freshwater Fish Formula Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 3.99
22	Acana Heritage Meats Formula Dry Dog Food	2/19/2019	Amazon	12 oz	\$ 7.69
23	Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 4.99
24	Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	2/19/2019	Amazon	12 oz	\$ 8.10
25	Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 4.99
26	Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 4.99
27	Acana Singles Duck and Pear Formula Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 4.99
28	Acana Singles Lamb and Apple Formula Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 4.99
29	Acana Singles Mackerel and Greens Formula Dry Dog Food	2/19/2019	Amazon	12 oz	\$ 6.99
30	Acana Singles Pork and Squash Formula Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 4.99
31	Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	2/19/2019	K9 Cuisine	6 oz	\$ 13.99
32	Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 5.99
33	Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 5.99
34	Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 5.99
35	Orijen Regional Red Freeze-Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	2/19/2019	K9 Cuisine	6 oz	\$ 17.99
36	Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 5.99
37	Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	2/19/2019	K9 Cuisine	6 oz	\$ 17.99
38	Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	2/19/2019	K9 Cuisine	12 oz	\$ 5.99

B. Preparing Samples

When the samples were received by INTI Service Corp., each sample was photo documented. The samples were then organized alphabetically by the name of the dog food. The samples were then assigned a number between 001 and 038. The samples were labeled accordingly using a label maker and labeled with the INTI Service Corp. address. Each sample was mixed thoroughly in the bag to assure amounts taken from the bags were representative of the entire bag. The samples were taken in two batches (001-019, 020-038) to the Iowa State University Veterinary Diagnostic Laboratory in Ames, Iowa to be tested for heavy metals (Arsenic, Cadmium, Mercury, and Lead). The samples were accompanied by chain of custody paperwork. After the ISU VDL had taken what they needed from the bags, the samples were packaged by INTI Service Corp. and shipped to the Expertox Laboratory in Texas to be tested for Plasticizers, again with chain of custody paperwork.

The samples were labeled with the following numbers:

Table 2: Sample Numbering

Acana Heritage Free-Run Poultry Formula Dry Dog Food	1, 20
Acana Heritage Freshwater Fish Formula Dry Dog Food	2, 21
Acana Heritage Meats Formula Dry Dog Food	3, 22
Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	4, 23
Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	5, 24
Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	6, 25
Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	7, 26
Acana Singles Duck and Pear Formula Dry Dog Food	8, 27
Acana Singles Lamb and Apple Formula Dry Dog Food	9, 28
Acana Singles Mackerel and Greens Formula Dry Dog Food	10, 29
Acana Singles Pork and Squash Formula Dry Dog Food	11, 30
Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	12, 31
Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	13, 32
Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	14, 33
Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	15, 34
Orijen Regional Red Freeze-Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	16, 35
Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	17, 36
Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	18, 37
Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	19, 38

## IX. TESTING PROCEDURES

### A. Iowa State University Veterinary Diagnostic Laboratory

Sample handling procedures for ISUVDL accession# 2019012697 and 2019016740:

All samples received at the Iowa State University Veterinary Diagnostic Laboratory (ISUVDL) are given an accession number and assigned a case coordinator. The samples for 2019012697 and 2019016740 were assigned to Dr. Radke. Following accessioning the samples for both 2019012697 and 2019016740 were tracked to the Analytical Chemistry Services (ACS) laboratory for preparation and analysis. A random portion of each sample was ground to produce a homogenous sample sufficiently large enough to perform the requested testing (typically 200 – 400g). Where possible samples were ground using a Retch Mill, however samples deemed unacceptable for the Retsch mill were ground using a Waring blender with a glass jar. Following sample preparation, an acid digest was performed on each sample. A 1g portion of each sample was weighed into a microwave digestion vessel and digested in nitric acid. Following digestion, the digest was filtered and diluted to 25mL with 18MegOhm water. An additional 1:10 dilution in 1% nitric acid was performed prior to analysis by ICP/MS for Arsenic (As), Cadmium (Cd), Lead (Pb), and Mercury (Hg). All results are on an as received basis.

### B. Expertox Drugs, Alcohol, and Poisons Laboratory

All received samples were received and document in accordance with AAFS guidelines of the chain of custody and sample documentation. Dr. LyKissa oversaw all laboratory testing and documentation. It is important to note that Expertox used all acid washed glassware to handle the samples that were tested.

All samples were taken from the original individual bags the products were purchased in and sealed by the Iowa State VDL. An approved in-house procedure was used to collect the samples. The range of sample size that was tested was 25-50 mg. Only purified solvents were used. All were tested using chromatography mass spectrometry (GC-MS) systems.

All the samples that were sent first to ISU are still at Expertox and held in AAFS approved custody methods.



## X. RESULTS

## A. Iowa State University Veterinary Diagnostic Laboratory Results:

Table 3: ISU VDL Results

Dog Food Name	#	ISU Set 1				#	ISU Set 2			
		As	Cd	Hg	Pb		As	Cd	Hg	Pb
Acana Heritage Free-Run Poultry Formula Dry Dog Food	1	160	< 100	< 100	120	20	260	< 100	< 100	200
Acana Heritage Freshwater Fish Formula Dry Dog Food	2	1100	100	< 100	< 100	21	980	< 100	< 100	210
Acana Heritage Meats Formula Dry Dog Food	3	360	< 100	< 100	280	22	340	< 100	< 100	420
Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	4	340	< 100	< 100	260	23	240	< 100	< 100	350
Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	5	160	< 100	< 100	190	24	290	< 100	< 100	570
Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	6	470	< 100	< 100	< 100	25	570	< 100	< 100	200
Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	7	2100	190	< 100	< 100	26	1700	150	< 100	180
Acana Singles Duck and Pear Formula Dry Dog Food	8	200	< 100	< 100	320	27	180	< 100	< 100	450
Acana Singles Lamb and Apple Formula Dry Dog Food	9	250	< 100	< 100	140	28	290	< 100	< 100	290
Acana Singles Mackerel and Greens Formula Dry Dog Food	10	1400	190	< 100	< 100	29	1000	250	< 100	230
Acana Singles Pork and Squash Formula Dry Dog Food	11	230	< 100	< 100	220	30	260	< 100	< 100	280
Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	12	880	< 100	< 100	140	31	780	< 100	< 100	180
Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	13	570	< 100	< 100	< 100	32	840	< 100	< 100	200
Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	14	750	< 100	< 100	< 100	33	660	< 100	< 100	270
Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	15	450	< 100	< 100	340	34	650	< 100	< 100	380
Orijen Regional Red Freeze-Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	16	550	130	< 100	280	35	250	< 100	< 100	640
Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	17	1900	180	< 100	180	36	1900	120	< 100	200
Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	18	460	< 100	< 100	270	37	460	< 100	< 100	260
Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	19	1100	< 100	< 100	260	38	1600	< 100	< 100	280

Results are reported in parts per billion (ppb) on an as received basis.

Heavy Metal Panel (Arsenic, Cadmium, Mercury, Lead) by ICP-MS.

## B. Expertox Drugs, Alcohol, and Poisons Laboratory Plasticizers Results:

Table 4: Expertox Results

Dog Food Name	#	Bis-2-ethylhexyl-phthalate ug/mg	Phthalate (Diethyl) ug/mg	#	Bis-2-ethylhexyl-phthalate ug/mg	Phthalate (Diethyl) ug/mg
Acana Heritage Free-Run Poultry Formula Dry Dog Food	1	61		20	92	
Acana Heritage Freshwater Fish Formula Dry Dog Food	2		84	21		82
Acana Heritage Meats Formula Dry Dog Food	3		82	22		75
Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	4		82	23		75
Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	5		79	24		66
Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	6	82		25		65
Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	7		71	26		69
Acana Singles Duck and Pear Formula Dry Dog Food	8		73	27		
Acana Singles Lamb and Apple Formula Dry Dog Food	9		103	28		90
Acana Singles Mackerel and Greens Formula Dry Dog Food	10		86	29		112
Acana Singles Pork and Squash Formula Dry Dog Food	11		65	30		101
Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	12		240	31		215
Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	13	155		32		70
Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	14		120	33		90
Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	15		69	34		71
Orijen Regional Red Freeze-Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	16		287	35		198
Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	17		85	36		110
Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	18		315	37		222
Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	19		109	38		54

Plasticizers by GCMS

## C. Testing results as alleged in complaint.

Table 5

Dog Food Name	As	Cd	Hg	Pb	BPA	BPS
Acana Heritage Free-Run Poultry Formula Dry Dog Food	292.9	27.8	3.3	290.2	62.2	
Acana Heritage Freshwater Fish Formula Dry Dog Food	977.7	56.2	27.4	486.8	ND	
Acana Heritage Meats Formula Dry Dog Food	384.8	24.4	6.4	1731.9	58.3	ND
Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	358.2	32.5	14.9	336.7	82.9	
Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	262.8	30.6	9.6	305	ND	
Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	846.4	37.5	8.7	489	82.7	
Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	3256.4	113	51.2	249.3	32.5	ND
Acana Singles Duck and Pear Formula Dry Dog Food	532.4	30.9	15.4	537.4	102.7	
Acana Singles Lamb and Apple Formula Dry Dog Food	401.2	35	3.2	423.4	73.2	ND
Acana Singles Mackerel and Greens Formula Dry Dog Food	1510.7	112.2	29.6	251.1	40.1	ND
Acana Singles Pork and Squash Formula Dry Dog Food	373.7	25.6	4	329.6	57.6	ND
Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	23.21	7.74	9.45	7.33	13.41	
Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	791.2	87.2	12.2	490.8	32.2	ND
Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	907.6	93.2	10.8	489.8	ND	
Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	849.4	123.1	21.4	167.7	43.6	ND
Orijen Regional Red Freeze-Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	102.66	23.4	19.6	16.85	ND	
Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	3169.8	200.5	54.9	38.7	39.5	ND
Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	23.13	27.64	5.35	12.26	6.02	ND
Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	1628.5	134.5	43.6	471.8	40.3	ND

Results are reported in parts per billion (ppb) on an as received basis.

XI. STATISTICAL ANALYSIS

A. Arsenic

Table 6.1

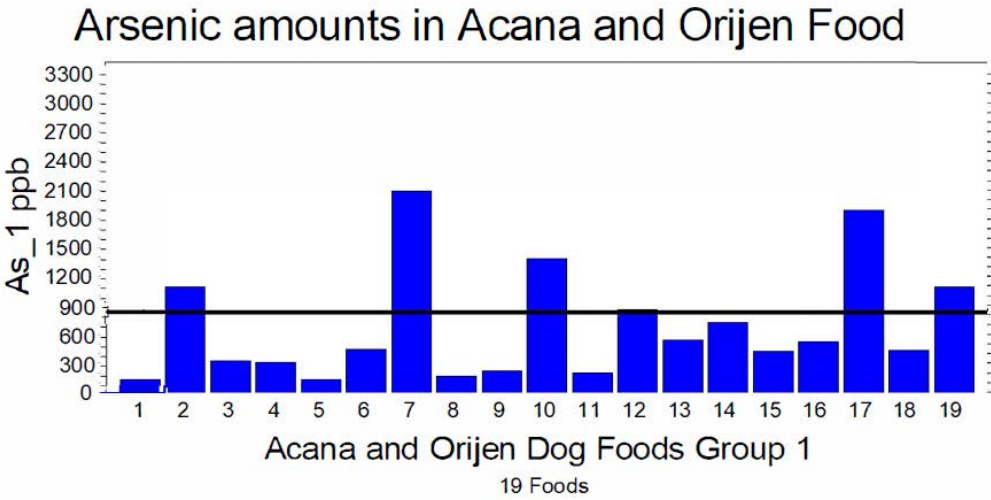


Table 6.2

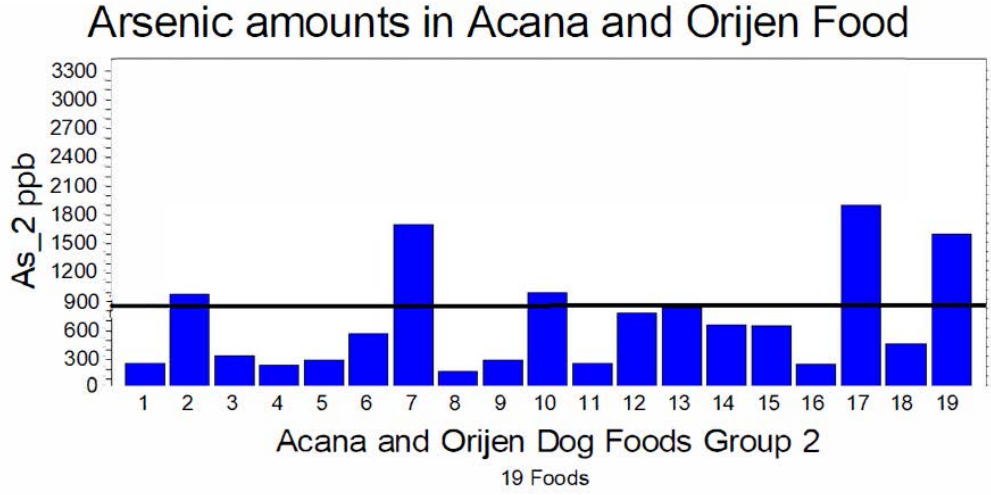
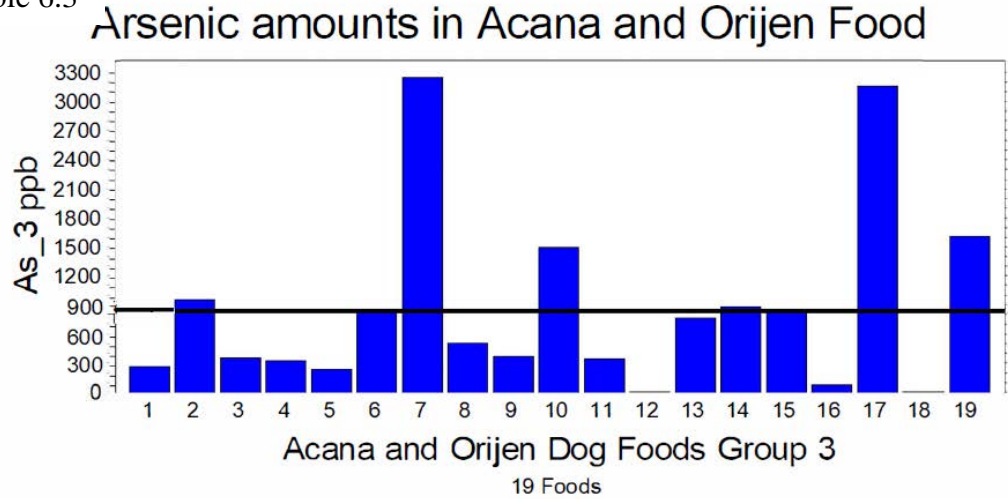


Table 6.3



748

## B. Cadmium

Table 7.1

## Cadmium amounts in Acana and Orijen Food

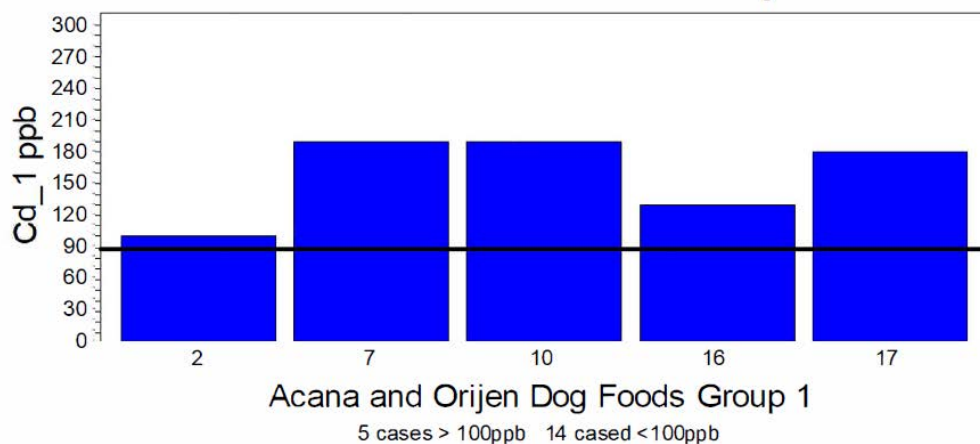


Table 7.2

## Cadmium amounts in Acana and Orijen Food

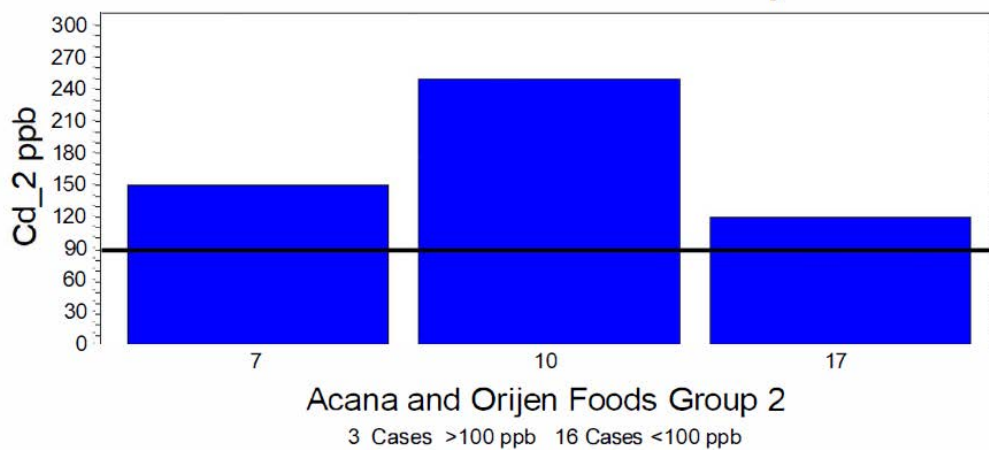
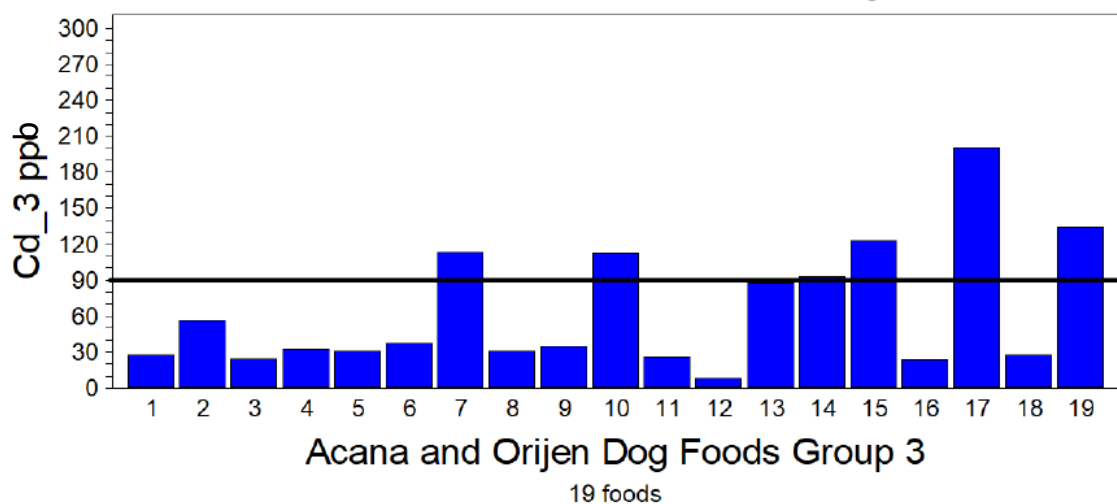


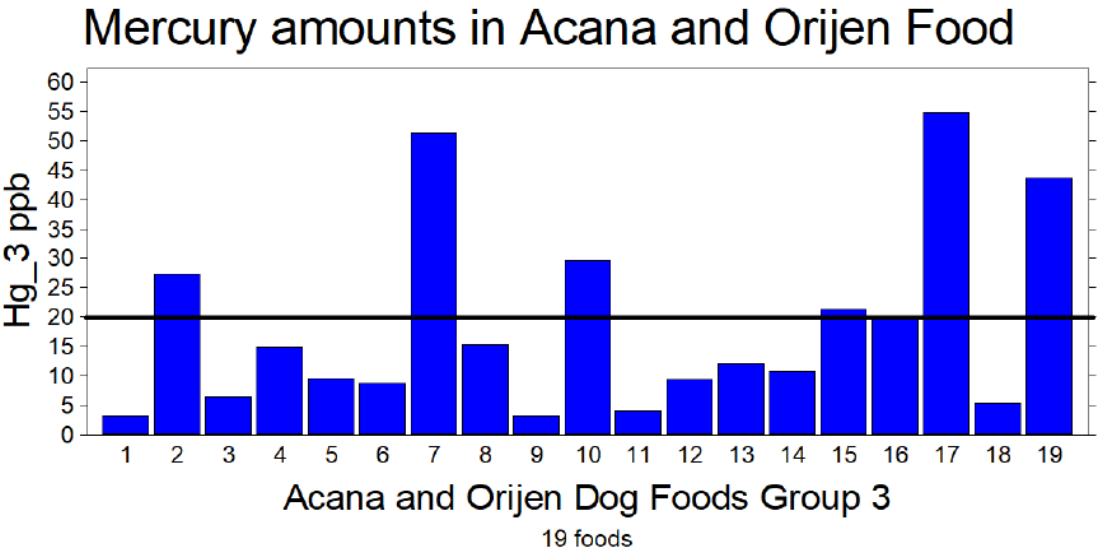
Table 7.3

## Cadmium amounts in Acana and Orijen Food



C. Mercury

Table 8



766

D. Lead

Table 9.1

## Lead amounts in Acana and Orijen foods

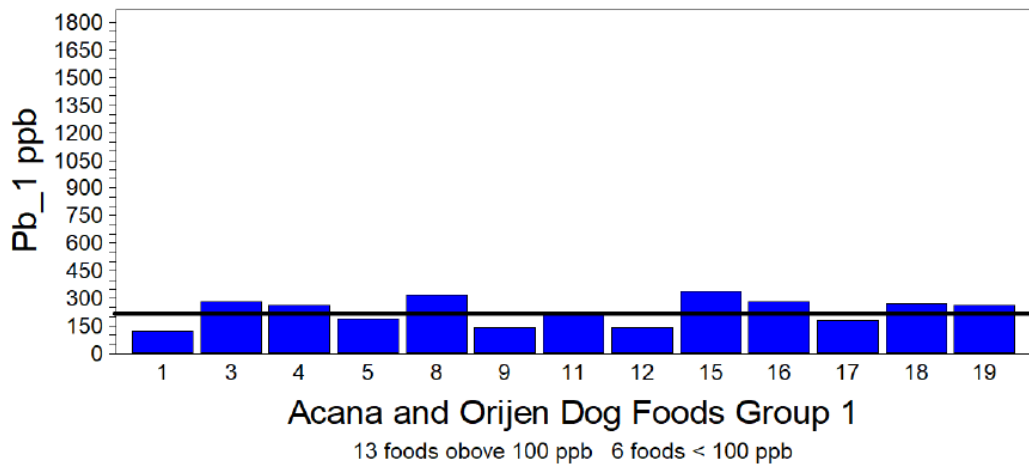


Table 9.2

## Lead amounts in Acana and Orijen foods

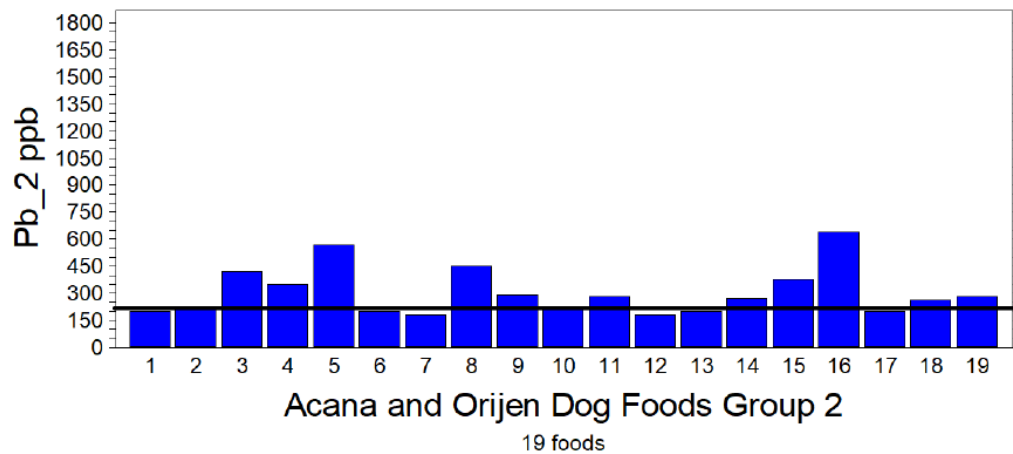


Table 9.3

## Lead amounts in Acana and Orijen foods

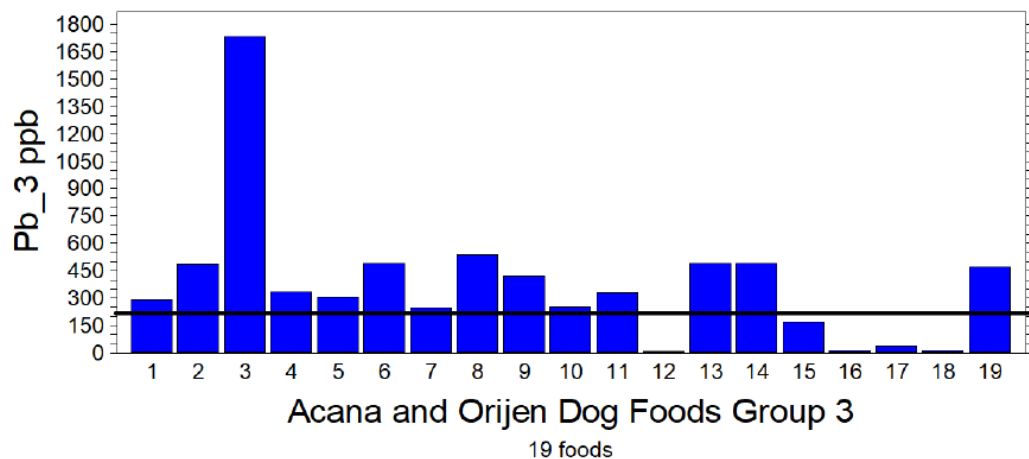


Table 10

## Champion - Fish Ingredients

Name of Food	Contains Fish	Fish Type		Fish			
Acana Heritage Free-Run Poultry Formula Dry Dog Food	Y	1,2		Catfish Meal	1	Flounder	20
Acana Heritage Freshwater Fish Formula Dry Dog Food	Y	1,2,3,4,5,6,7,8,9,10		Polluck Oil	2	Mackerel Oil	21
Acana Heritage Meats Formula Dry Dog Food	Y	2		Rainbow trout	3	Freeze Dried Mackerel	22
Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food	Y	1, 11, 12		Whole Blue Catfish	4	Atlantic Flounder	23
Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food	Y	1, 3, 12,		Catfish Oil	5	Whole Atlantic Mackerel	24
Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food	Y	1, 13, 4, 3, 2,		Whole White Perch	6	Whole Atlantic Herring	25
Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	Y	14, 15, 16, 17, 8, 18,. 13, 19, 20, 2, 9, 10		Alaskan Cod Meal	7	Dehydrated Mackerel	26
Acana Singles Duck and Pear Formula Dry Dog Food	Y	2		Mackerel Meal	8	Monkfish	27
Acana Singles Lamb and Apple Formula Dry Dog Food	Y	2		Natural Cod Flavor	9	Acadian Redfish	28
Acana Singles Mackerel and Greens Formula Dry Dog Food	Y	8, 14, 21, 22		Freeze Dried Cod Liver	10	Blue Whiting Meal	29
Acana Singles Pork and Squash Formula Dry Dog Food	Y	2		Whole Catfish	11	Deboned Arctic Char	30
Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	Y	15, 20,		Herring Oil	12	Stealhead Trout	31
Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	Y	23, 24, 25, 26, 2,		Polluck Meal	13	Whole Pilchard	32
Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	Y	23, 24, 25, 26, 2		Whole Mackerel	14		
Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food	Y	8, 18, 2		Whole Herring	15		
Orijen Regional Red Freeze Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	Y	20, 15		Whole Redfish	16		
Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	Y	24, 25, 27, 28, 20, 17, 8, 18, 29, 19, 13, 9, 2, 10		Whole Silver Hake	17		
Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	Y	20, 15		Herring Meal	18		
Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	Y	30, 31, 32, 29, 8, 2		Cod Meal	19		



Table 11

Eurofins Data - COAs - Eurofins000001-520

	mg/kg				
Champion Pet Foods - Contaminated Foods	As	Cd	Hg	Pb	Testing Date
Acana Heritage Free-Run Poultry Formula Dry Dog Food	0.475	0.035	< 0.010	0.52	3/3/2016
Acana Heritage Freshwater Fish Formula Dry Dog Food	0.85	0.044	0.016	0.283	2/9/2016
""	0.988	0.094	0.018	0.064	2/5/2018
Acana Heritage Meats Formula Dry Dog Food	0.696	0.036	< 0.010	0.35	2/9/2016
Acana Regionals Appalachian Ranch with Red Meats and Freshwater Catfish Dry Dog Food					
Acana Regionals Grasslands with Lamb, Trout, and Game Bird Dry Dog Food					
Acana Regionals Meadowland with Poultry, Freshwater Fish and Eggs Dry Dog Food					
Acana Regionals Wild Atlantic New England Fish and Fresh Greens Dry Dog Food	1.94	0.224	0.05	0.043	6/27/2017
"" Same as above	2.21	0.193	0.042	0.043	2/1/2018
""	1.95	0.203	0.055	0.436	11/16/2018
""	1.21	0.046	0.029	< 0.010	11/20/2018
""	1.62	0.034	0.026	< 0.010	12/23/2018
Acana Singles Duck and Pear Formula Dry Dog Food					
Acana Singles Lamb and Apple Formula Dry Dog Food					
Acana Singles Mackerel and Greens Formula Dry Dog Food					
Acana Singles Pork and Squash Formula Dry Dog Food					
Orijen Adult Dog Freeze Dried Chicken, Turkey, Wild-Caught Fish, Eggs Wet Dog Food	0.839	0.028	0.016	0.0171	3/7/2016
Orijen Grain Free Puppy Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food					
Orijen Original Chicken, Turkey, Wild-Caught Fish, Eggs Dry Dog Food	2.31	0.039	0.039	0.019	8/23/2019
""	1	0.129	0.021	0.019	10/24/2017
""	0.755	0.047	0.018	0.038	2/2/2018
""	1.49	0.049	0.033	< 0.01	4/25/2018
""	1.42	0.058	0.025	0.016	7/19/2018
""	1.85	0.039	0.044	0.01	8/6/2018
""	1.5	0.067	0.03	< 0.010	8/10/2018
""	1.53	0.066	0.031	< 0.010	10/12/2018
""	0.747	0.069	< 0.010	0.038	10/15/2018
""	1.28	0.039	0.028	0.015	11/20/2018
Orijen Regional Red with Angus Beef, Wild Boar, Boer Goat, Romney Lamb, Yorkshire Pork and Wild-Caught Mackerel Dry Dog Food					
Orijen Regional Red Freeze Dried Angus Beef, Ranch Raised Lamb, Wild Boar, Pork, Bison Wet Dog Food	0.44	0.164	0.02	0.07	10/23/2013
""	0.993	0.033	0.068	0.045	11/15/2018

Orijen Six Fish with New England Mackerel, Herring, Flounder, Redfish, Monkfish and Silver Hake Dry Dog Food	3.14	0.238	0.049	0.042	6/27/2017
""	1.7	0.134	0.028	0.018	8/23/2017
""	1.66	0.087	0.026	0.034	9/22/2017
""	3	0.189	0.059	0.097	2/1/2018
""	3.11	0.299	0.052	0.065	3/2/2018
""	1.25	0.05	0.032	0.013	4/25/2018
""	2.19	0.186	0.044	0.041	6/28/2018
""	2.08	0.043	0.033	< 0.010	10/12/2018
""	2.46	0.246	0.06	0.032	11/16/2018
""	1.44	0.032	0.036	0.014	11/20/2018
""	1.7	0.04	0.034	0.042	12/23/2018
Orijen Tundra Freeze Dried Venison, Elk, Bison, Quail, Steelhead Trout Wet Dog Food	1.37	0.034	0.103	0.042	11/15/2018
""	0.521	0.085	0.015	0.062	11/15/2018
Orijen Tundra Goat, Venison, Mutton, Bison, Arctic Char, Rabbit Dry Dog Food	3.106	0.094	0.034	0.239	8/14/2014

mg/kg					
Fish Ingredient	As	Cd	Hg	Pb	Testing Date
Acadian Redfish	0.863	0.039	0.03	< 0.010	9/13/2017
Acadian Redfish	0.955	0.045	0.043	< 0.010	2/8/2018
Atlantic Herring	1.49	0.022	0.018	< 0.010	8/6/2016
Atlantic Herring	1.84	0.044	0.032	< 0.010	8/23/2017
Atlantic Herring	1.04	0.04	0.022	< 0.010	2/3/2018
Atlantic Herring	0.892	0.035	0.025	< 0.010	5/3/2018
Atlantic Herring	1.26	0.052	0.033	< 0.010	7/19/2018
Atlantic Herring	0.856	0.043	0.023	0.012	10/20/2018
Atlantic Mackerel	1.41	0.039	0.025	< 0.010	8/23/2017
Atlantic Mackerel	1.06	0.031	0.014	< 0.010	9/22/2017
Atlantic Mackerel	1.71	0.071	0.017	0.01	5/1/2018
Atlantic Mackerel	1.48	0.042	0.022	< 0.01	7/19/2018
Atlantic Mackerel	1.35	0.046	0.025	< 0.010	10/12/2018
Blue White Fish Meal	9.16	0.159	0.134	< 0.01	4/27/2018
Blue White Fish Meal	10.8	0.194	0.22	< 0.010	10/17/2018
Catfish	0.063	< 0.010	0.012	0.016	7/23/2018
Catfish FRH	0.013	0.014	0.018	0.036	9/14/2017
Catfish FRH	0.211	0.027	0.029	0.044	2/3/2018
Catfish FRH	0.277	0.021	0.031	0.028	5/8/2018
Catfish HRF	0.142	< 0.01	0.048	0.053	7/19/2018
Catfish HRF	0.193	0.012	0.034	0.053	10/30/2018
Catfish Meal	0.072	0.018	< 0.010	0.185	10/5/2015
Catfish Meal	0.107	0.03	< 0.010	0.251	10/5/2015
Catfish Meal	0.121	0.014	< 0.010	0.25	6/14/2017
Catfish Meal	0.096	< 0.010	< 0.010	0.141	2/2/2018
Catfish Meal	0.079	0.015	0.012	0.206	4/11/2018

Catfish Meal	0.123	0.018	< 0.010	0.162	10/16/2018
Catfish Oil	0.158	< 0.010	< 0.010	0.141	6/27/2016
Cod Liver	4.44	0.065	0.042	< 0.01	7/19/2018
Cod Liver	4.4	0.016	0.017	0.011	5/3/2018
Cod Liver Blend	4.1	0.028	0.022	< 0.010	3/19/2018
Cod Liver Blend	1.36	0.029	0.189	< 0.010	10/20/2018
Cod Meal	11.4	0.154	0.189	0.034	7/5/2016
Cod Meal	5.01	0.143	0.242	0.092	5/31/2017
Cod Meal	7.41	0.117	0.297	0.041	2/14/2018
Dried Herring	5.07	0.751	0.298	0.175	10/3/2018
Dried Salmon	2.52	0.016	0.069	< 0.010	5/31/2017
Flounder	3.61	0.016	0.024	< 0.010	8/6/2016
Flounder	2.94	0.013	0.02	< 0.010	2/3/2018
Flounder	1.76	0.084	0.04	0.014	2/26/2018
Flounder	1.18	0.058	0.037	0.041	5/3/2018
Flounder	1.96	< 0.01	0.014	< 0.01	7/19/2018
Flounder	1.35	0.029	0.036	< 0.01	10/20/2018
Frozen Fish - Flounder	5.383	0.018	0.029	0.13	4/3/2015
Frozen Fish - Hake/Whiting	2.704	0.022	0.02	< 0.010	4/14/2015
Frozen Fish - Hering	1.058	0.034	0.019	< 0.010	3/13/2015
Frozen Fish - Mackerel	1.395	0.021	0.023	< 0.010	4/3/2015
Frozen Fish - Monkfish	20.529	< .010	0.165	< 0.010	4/3/2015
Frozen Fish - Redfish	0.8	0.043	0.044	< 0.010	4/3/2015
Herring Meal	5.08	0.152	0.066	0.038	6/19/2017
Herring Meal	4.06	0.203	0.091	0.049	1/31/2018
Herring Meal	2.42	0.121	0.051	0.014	4/10/2018
Herring Meal	4.15	0.146	0.066	0.024	7/27/2018
Herring Oil	9.57	< 0.010	< 0.010	< 0.010	6/27/2016
LA Herring Meal	6.48	0.226	0.101	0.033	10/9/2018
Mackerel Blend	1.1	0.075	0.018	< 0.010	8/6/2016
Mackerel Blend	1.2	0.196	0.018	< 0.010	9/13/2017
Mackerel Blend	1.48	0.081	0.018	0.015	5/3/2018
Mackerel Meal	2.16	1.39	0.063	0.06	2/10/2018
Mackerel Meal	2.51	1.45	0.07	0.112	4/15/2018
Mackerel Meal	1.8	1.19	0.104	0.05	7/27/2018
Mackerel Meal	1.97	1.36	0.103	1.36	10/17/2018
Mackerel Oil	6.62	< 0.010	< 0.010	< 0.010	6/27/2016
Monkfish	4.84	0.011	0.056	0.026	8/6/2016
Monkfish	5.08	< 0.010	0.06	0.038	9/13/2017
Monkfish	2.32	0.13	0.024	0.114	2/3/2018
Perch	0.536	0.012	0.06	0.019	8/6/2016
Perch	0.102	0.017	0.069	0.018	4/24/2018
Pollock Meal	2.59	0.184	0.061	0.012	2/2/2018
Pollock Meal	4.02	0.228	0.034	0.01	4/19/2018
Pollock Meal	4.04	0.155	0.035	< 0.010	7/24/2018
Pollock Meal	3.7	0.205	0.033	< 0.010	10/27/2018
Poluck Meal	2.49	0.121	0.033	0.011	6/19/2017
Poluck Oil	6.91	< 0.010	< 0.010	< 0.010	6/27/2016
Premium Dried Sardines	5.71	1.01	0.083	0.145	7/24/2018

Rainbow Trout	0.399	< 0.010	0.022	< 0.010	9/14/2017
Rainbow Trout	0.501	< 0.010	0.018	< 0.010	2/24/2018
Rainbow Trout	0.369	< 0.01	< 0.01	< 0.01	7/19/2018
Rainbow Trout	0.196	< 0.01	0.01	< 0.01	10/30/2018
Rainbow Trout	0.141	< 0.01	< 0.01	< 0.01	12/23/2018
Salmon Oil	0.991	< 0.010	< 0.010	< 0.010	10/15/2015
Silver Hake	2.81	0.039	0.029	< 0.010	9/13/2017
Silver Hake	0.68	0.015	0.025	< 0.010	2/8/2018
Spray Dried Herring	2.43	0.159	0.654	0.057	4/19/2018
Spray Dried Herring	4.12	0.6	0.295	0.362	10/27/2018
Spray Dried Mackerel	6.95	0.727	0.053	0.033	6/19/2017
Spray Dried Mackerel	5.39	0.714	0.144	0.048	2/3/2018
Spray Dried Mackerel	6.32	0.377	0.076	0.036	5/8/2018
Spray Dried Mackerel	6.2	0.232	..048	0.025	7/31/2018
Spray Dried Sardines	5.6	0.62	0.046	0.048	4/15/2018
Spray Dried Sardines	6.4	0.746	0.61	0.094	10/9/2018
White Fish Meal	2.93	0.141	0.043	0.013	4/10/2018
White Fish Meal	9.46	0.222	0.149	0.054	7/24/2018
White Fish Meal	2.75	0.573	0.18	0.038	12/6/2018
Whole Catfish	0.128	< 0.010	0.023	0.037	6/24/2016
Whole Catfish	0.194	< 0.010	0.026	0.036	9/7/2017
Whole Catfish	0.106	0.01	0.025	0.247	9/15/2017
Whole Catfish	0.103	< 0.010	0.043	0.037	2/8/2018
Whole Catfish	0.08	< 0.010	0.046	0.026	4/24/2018
Wild Atlantic Blend	1.4	0.052	0.031	< 0.010	8/6/2016
Wild Atlantic Blend	1.89	0.045	0.033	0.011	9/13/2017
Wild Atlantic Blend	2.8	0.043	0.039	0.076	8/6/2018
Wild Caught Perch	0.38	0.013	0.043	0.069	9/13/2017
Wild Caught Perch	0.472	0.014	0.056	0.023	2/3/2018

\*Testing Omitted: Non-Fish Ingredients, Cat Food, and Testing labeled "Pet Food"

\*\* Blank = No Matching Test Data